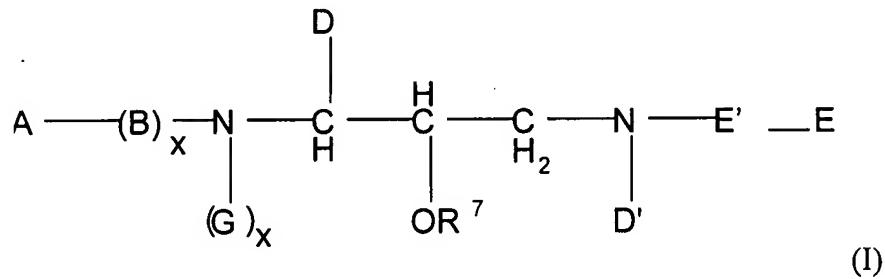


## Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A compound of formula I:



or a pharmaceutically acceptable salt thereof, wherein:

E' is -SO<sub>2</sub>-;

A is selected from -R<sup>1</sup>-C<sub>1</sub>-C<sub>6</sub> alkyl, which is optionally substituted with one or more groups independently selected from hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, Ht, -O-Ht, -NR<sup>2</sup>-CO-N(R<sup>2</sup>)<sub>2</sub>, -SO<sub>2</sub>R<sup>2</sup> or -CO-N(R<sup>2</sup>)<sub>2</sub>; or -R<sup>1</sup>-C<sub>2</sub>-C<sub>6</sub> alkenyl, which is optionally substituted with one or more groups independently selected from hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, Ht, -O-Ht, -NR<sup>2</sup>-CO-N(R<sup>2</sup>)<sub>2</sub> or -CO-N(R<sup>2</sup>)<sub>2</sub>; or R<sup>7</sup>;

R<sup>1</sup> is -O-C(O)- ;

each Ht is independently selected from C<sub>3</sub>-C<sub>7</sub> cycloalkyl; C<sub>5</sub>-C<sub>7</sub> cycloalkenyl; C<sub>6</sub>-C<sub>14</sub> aryl; or a 5-7 membered saturated or unsaturated heterocycle, containing one or more heteroatoms selected from N, O, or S; wherein said aryl or said heterocycle is optionally fused to Q; and wherein any member of said Ht is optionally substituted with one or more substituents independently selected from oxo, -OR<sup>2</sup>, SR<sup>2</sup>, -R<sup>2</sup>, -N(R<sup>2</sup>)(R<sup>2</sup>), -R<sup>2</sup>-OH, -CN, -CO<sub>2</sub>R<sup>2</sup>, -C(O)-N(R<sup>2</sup>)<sub>2</sub>, -S(O)<sub>2</sub>-N(R<sup>2</sup>)<sub>2</sub>, -N(R<sup>2</sup>)-C(O)-R<sup>2</sup>, -N(R<sup>2</sup>)-C(O)O-R<sup>2</sup>, -C(O)-R<sup>2</sup>, -S(O)<sub>n</sub>-

$R^2$ ,  $-OCF_3$ ,  $-S(O)_n-Q$ , methylenedioxy,  $-N(R^2)-S(O)_2(R^2)$ , halo,  $-CF_3$ ,  $-NO_2$ ,  $Q$ ,  $-OQ$ ,  $-OR^7$ ,  $-SR^7$ ,  $-R^7$ ,  $-N(R^2)(R^7)$  or  $-N(R^7)_2$ ;

each  $Q$  is independently selected from a 3-7 membered saturated, partially saturated or unsaturated carbocyclic ring system; or a 5-7 membered saturated, partially saturated or unsaturated heterocyclic ring containing one or more heteroatoms selected from O, N, or S; wherein  $Q$  is optionally substituted with one or more groups selected from oxo,  $-OR^2$ ,  $-R^2$ ,  $-SO_2R^2$ ,  $-SO_2-N(R^2)_2$ ,  $-N(R^2)_2$ ,  $-N(R^2)-C(O)-R^2$ ,  $-R^2-OH$ ,  $-CN$ ,  $-CO_2R^2$ ,  $-C(O)-N(R^2)_2$ , halo,  $-CF_3$ ;

each  $R^2$  is independently selected from H, or  $C_1-C_4$  alkyl; and wherein said alkyl, when not a substituent of  $Q$ , is optionally substituted with  $Q$  or  $-OR^3$ ; wherein when said  $R^2$  is an  $-OR^3$  substituted moiety, said  $R^3$  in  $-OR^3$  may not be  $-OR^2$  substituted;

B is absent;

each  $x$  is independently 0 or 1;

each  $R^3$  is independently selected from H, Ht,  $C_1-C_6$  alkyl,  $C_2-C_6$  alkenyl,  $C_2-C_6$  alkynyl,  $C_3-C_6$  cycloalkyl or  $C_5-C_6$  cycloalkenyl; wherein any member of said  $R^3$ , except H, is optionally substituted with one or more substituents selected from  $-OR^2$ ,  $-C(O)-NH-R^2$ ,  $-S(O)_n-N(R^2)(R^2)$ ,  $-N(R^2)_2$ ,  $-N(R^2)-C(O)-O(R^2)$ ,  $-N(R^2)-C(O)-N(R^2)$ ,  $-N(R^2)-C(O)-(R^2)$ , Ht,  $-CN$ ,  $-SR^2$ ,  $-CO_2R^2$ , or  $NR^2-C(O)-R^2$ ;

each  $n$  is independently 1 or 2;

G is H;

D is benzyl  $C_4-C_6$  alkyl optionally substituted with Q;

D' is selected from  $C_1-C_{15}$  alkyl,  $C_2-C_{15}$  alkenyl or  $C_2-C_{15}$  alkynyl, each of which contains one or more substituents selected from oxo,  $-CF_3$ ,  $-OCF_3$ ,  $-NO_2$ , azido,  $-SH$ ,  $-N(R^3)-N(R^3)_2$ ,  $-O-N(R^3)_2$ ,  $-(R^3)N-O-(R^3)$ ,  $-CN$ ,  $-CO_2R^3$ ,  $-C(O)-N(R^3)_2$ ,  $-S(O)_n-N(R^3)_2$ ,  $-N(R^3)-C(O)-R^3$ ,  $-N(R^3)-C(O)-N(R^3)_2$ ,  $-N(R^3)-C(O)-S(R^3)$ ,  $-C(O)-R^3$ ,  $-N(R^3)-S(O)_n(R^3)$ ,  $-N(R^3)-S(O)_n-N(R^3)_2$ ,  $-S-NR^3-C(O)R^3$ ,  $-C(S)N(R^3)_2$ ,  $-C(S)R^3$ ,  $-NR^3-C(O)OR^3$ ,  $-O-C(O)OR^3$ ,  $-O-C(O)N(R^3)_2$ ,

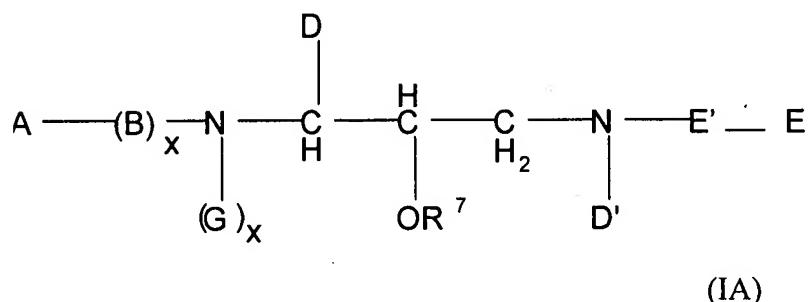
$\text{-NR}^3\text{-C(S)R}^3$ ,  $=\text{N-OH}$ ,  $=\text{N-OR}^3$ ,  $=\text{N-N(R}^3)_2$ ,  $=\text{NR}^3$ ,  $=\text{NNR}^3\text{C(O)N(R}^3)_2$ ,  $=\text{NNR}^3\text{C(O)OR}^3$ ,  
 $=\text{NNR}^3\text{S(O)}_n\text{-N(R}^3)_2$ ,  $-\text{NR}^3\text{-C(S)OR}^3$ ,  $-\text{NR}^3\text{-C(S)N(R}^3)_2$ ,  $-\text{NR}^3\text{-C[=N(R}^3]\text{-N(R}^3)_2$ ,  $-\text{N(R}^3)\text{-C[=N-NO}_2\text{]-N(R}^3)_2$ ,  
 $-\text{N(R}^3)\text{-C[=N-NO}_2\text{]-OR}^3$ ,  $-\text{N(R}^3)\text{-C[=N-CN]\text{-OR}^3}$ ,  $-\text{N(R}^3)\text{-C[=N-CN]\text-(R}^3)_2$ ,  $-\text{OC(O)R}^3$ ,  
 $-\text{OC(S)R}^3$ ,  $-\text{OC(O)N(R}^3)_2$ ,  $-\text{C(O)N(R}^3)\text{-N(R}^3)_2$ ,  $-\text{O-C(O)N(R}^3)\text{-N(R}^3)_2$ ,  $\text{O-C(O)N(OR}^3)(\text{R}^3)$ ,  
 $\text{N(R}^3)\text{-N(R}^3)\text{C(O)R}^3$ ,  $\text{N(R}^3)\text{-OC(O)R}^3$ ,  $\text{N(R}^3)\text{-OC(O)R}^3$ ,  $\text{N(R}^3)\text{-OC(O)R}^3$ ,  
 $-\text{OC(S)N(R}^3)_2$ ,  $-\text{OC(S)N(R}^3)(\text{R}^3)$ , or  $\text{PO}_3\text{-R}^3$ ;

E is selected from Ht; O-Ht; Ht-Ht; Ht fused with Ht;  $-\text{O-R}^3$ ;  $-\text{N(R}^2)(\text{R}^3)$ ;  $\text{C}_1\text{-C}_6$  alkyl optionally substituted with one or more groups selected from  $\text{R}^4$  or Ht;  $\text{C}_2\text{-C}_6$  alkenyl optionally substituted with one or more groups selected from  $\text{R}^4$  or Ht;  $\text{C}_3\text{-C}_6$  saturated carbocycle optionally substituted with one or more groups selected from  $\text{R}^4$  or Ht; or  $\text{C}_5\text{-C}_6$  unsaturated carbocycle optionally substituted with one or more groups selected from  $\text{R}^4$  or Ht;

each  $\text{R}^4$  is independently selected from  $-\text{OR}^2$ ,  $-\text{OR}^3$ ,  $-\text{SR}^2$ ,  $-\text{SOR}^2$ ,  $-\text{SO}_2\text{R}^2$ ,  $-\text{CO}_2\text{R}^2$ ,  $-\text{C(O)-NHR}^2$ ,  $-\text{C(O)-N(R}^2)_2$ ,  $-\text{C(O)-NR}^2(\text{OR}^2)$ ,  $-\text{S(O)}_2\text{-NHR}^2$ , halo,  $-\text{NR}^2\text{-C(O)-R}^2$ ,  $-\text{N(R}^2)_2$  or  $-\text{CN}$ ; and

each  $\text{R}^7$  is hydrogen.

2. (Previously presented) The compound according to claim 1, having the formula IA:



wherein:

D' is selected from C<sub>1-15</sub> alkyl, C<sub>2-15</sub> alkenyl or C<sub>2-C<sub>15</sub></sub> alkynyl; each of which is substituted with one to two -CN groups and is optionally substituted with C<sub>3-C<sub>8</sub></sub> cycloalkyl.

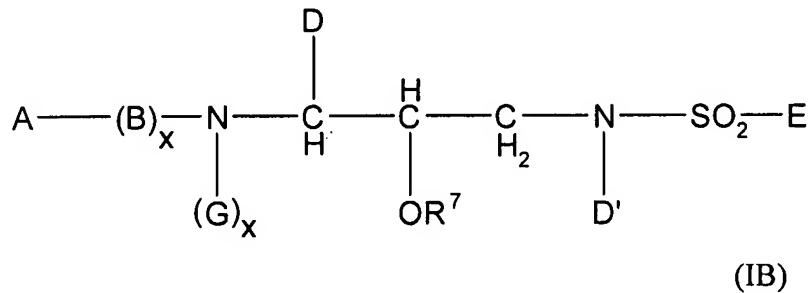
3. (Previously presented) The compound according to claim 2 wherein:

D' is selected from C<sub>1-15</sub> alkyl or C<sub>2-15</sub> alkenyl; each of which is substituted with one to two -CN groups and is optionally substituted with C<sub>3-C<sub>8</sub></sub> cycloalkyl.

4. (Previously presented) The compound according to claim 2 wherein:

D' is C<sub>2-C<sub>15</sub></sub> alkynyl which is substituted with one to two -CN groups and is optionally substituted with C<sub>3-C<sub>8</sub></sub> cycloalkyl.

5. (Previously presented) The compound according to claim 1 having the formula IB:



wherein:

D' is selected from C<sub>1-C<sub>15</sub></sub> alkyl, C<sub>2-C<sub>15</sub></sub> alkenyl or C<sub>2-C<sub>15</sub></sub> alkynyl, each of which contains one or more substituents selected from oxo, -CF<sub>3</sub>, -OCF<sub>3</sub>, -NO<sub>2</sub>, azido, -SH, -N(R<sup>3</sup>)-N(R<sup>3</sup>)<sub>2</sub>, -O-N(R<sup>3</sup>)<sub>2</sub>, -(R<sup>3</sup>)N-O-(R<sup>3</sup>), -CO<sub>2</sub>R<sup>3</sup>, -C(O)-N(R<sup>3</sup>)<sub>2</sub>, -S(O)<sub>n</sub>-N(R<sup>3</sup>)<sub>2</sub>, -N(R<sup>3</sup>)-C(O)-R<sup>3</sup>, -N(R<sup>3</sup>)-C(O)-N(R<sup>3</sup>)<sub>2</sub>, -N(R<sup>3</sup>)-C(O)-S(R<sup>3</sup>), -C(O)-R<sup>3</sup>, -N(R<sup>3</sup>)-S(O)<sub>n</sub>(R<sup>3</sup>), -N(R<sup>3</sup>)-S(O)<sub>n</sub>-N(R<sup>3</sup>)<sub>2</sub>, -S-NR<sup>3</sup>-C(O)R<sup>3</sup>, -C(S)N(R<sup>3</sup>)<sub>2</sub>, -C(S)R<sup>3</sup>, -NR<sup>3</sup>-C(O)OR<sup>3</sup>, -O-C(O)OR<sup>3</sup>, -O-C(O)N(R<sup>3</sup>)<sub>2</sub>, -NR<sup>3</sup>-

$C(S)R^3$ ,  $=N-OH$ ,  $=N-OR^3$ ,  $=N-N(R^3)_2$ ,  $=NR^3$ ,  $=NNR^3C(O)N(R^3)_2$ ,  $=NNR^3C(O)OR^3$ ,  
 $=NNR^3S(O)_n-N(R^3)_2$ ,  $-NR^3-C(S)OR^3$ ,  $-NR^3-C(S)N(R^3)_2$ ,  $-NR^3-C[=N(R^3)]-N(R^3)_2$ ,  $-N(R^3)-$   
 $C[=N-NO_2]-N(R^3)_2$ ,  $-N(R^3)-C[=N-NO_2]-OR^3$ ,  $-N(R^3)-C[=N-CN]-OR^3$ ,  $-N(R^3)-C[=N-CN]-$   
 $(R^3)_2$ ,  $-OC(O)R^3$ ,  $-OC(S)R^3$ ,  $-OC(O)N(R^3)_2$ ,  $-C(O)N(R^3)-N(R^3)_2$ ,  $-O-C(O)N(R^3)-N(R^3)_2$ ,  $O-$   
 $C(O)N(OR^3)(R^3)$ ,  $N(R^3)-N(R^3)C(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  $N(R^3)-OC(O)R^3$ , -  
 $OC(S)N(R^3)_2$ ,  $-OC(S)N(R^3)(R^3)$ , or  $PO_3-R^3$ .

6. (Previously presented) The compound according to claim 5 wherein:

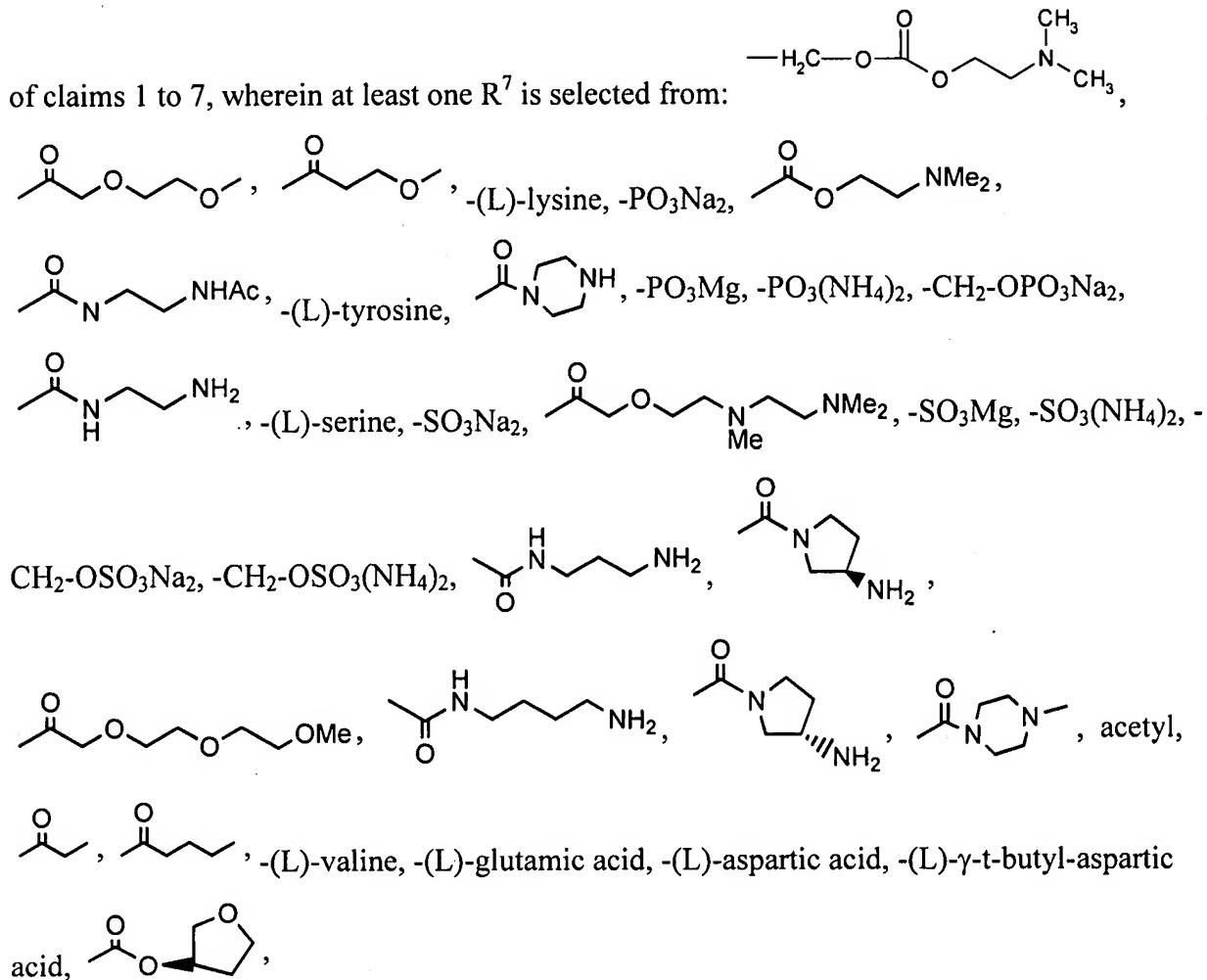
$D'$  is selected from  $C_{1-C_{15}}$  alkyl or  $C_{2-C_{15}}$  alkenyl, each of which contains one or more substituents selected from oxo,  $-CF_3$ ,  $-OCF_3$ ,  $-NO_2$ , azido,  $-N(R^3)-N(R^3)_2$ ,  $-O-N(R^3)_2$ ,  $-(R^3)N-$   
 $O-(R^3)$ ,  $-N(R^3)-C(O)-N(R^3)_2$ ,  $-N(R^3)-C(O)-S(R^3)$ ,  $-C(O)-R^3$ ,  $-N(R^3)-S(O)_n-(R^3)$ ,  $-N(R^3)-S(O)_n-$   
 $N(R^3)_2$ ,  $-S-NR^3-C(O)R^3$ ,  $-C(S)N(R^3)_2$ ,  $-C(S)R^3$ ,  $-NR^3-C(O)OR^3$ ,  $-O-C(O)OR^3$ ,  $-O-C(O)N(R^3)_2$ ,  
 $-NR^3-C(S)R^3$ ,  $=N-OH$ ,  $=N-OR^3$ ,  $=N-N(R^3)_2$ ,  $=NR^3$ ,  $=NNR^3C(O)N(R^3)_2$ ,  $=NNR^3C(O)OR^3$ ,  
 $=NNR^3S(O)_n-N(R^3)_2$ ,  $-NR^3-C(S)OR^3$ ,  $-NR^3-C(S)N(R^3)_2$ ,  $-NR^3-C[=N(R^3)]-N(R^3)_2$ ,  $-N(R^3)-$   
 $C[=N-NO_2]-N(R^3)_2$ ,  $-N(R^3)-C[=N-NO_2]-OR^3$ ,  $-N(R^3)-C[=N-CN]-OR^3$ ,  $-N(R^3)-C[=N-CN]-$   
 $(R^3)_2$ ,  $-OC(O)R^3$ ,  $-OC(S)R^3$ ,  $-OC(O)N(R^3)_2$ ,  $-C(O)N(R^3)-N(R^3)_2$ ,  $-O-C(O)N(R^3)-N(R^3)_2$ ,  $O-$   
 $C(O)N(OR^3)(R^3)$ ,  $N(R^3)-N(R^3)C(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  
 $-OC(S)N(R^3)_2$ ,  $-OC(S)N(R^3)(R^3)$ , or  $PO_3-R^3$ ;  $C_{2-C_{15}}$  alkynyl which contains one or more  
 substituents selected from oxo,  $-CF_3$ ,  $-OCF_3$ ,  $-NO_2$ , azido,  $-SH$ ,  $-N(R^3)-N(R^3)_2$ ,  $-O-N(R^3)_2$ ,  
 $-(R^3)N-O-(R^3)$ ,  $-CO_2R^3$ ,  $-C(O)-N(R^3)_2$ ,  $-S(O)_n-N(R^3)_2$ ,  $-N(R^3)-C(O)-R^3$ ,  $-N(R^3)-C(O)-N(R^3)_2$ ,  
 $-N(R^3)-C(O)-S(R^3)$ ,  $-C(O)-R^3$ ,  $-N(R^3)-S(O)_n-(R^3)$ ,  $-N(R^3)-S(O)_n-N(R^3)_2$ ,  $-S-NR^3-C(O)R^3$ ,  
 $-C(S)N(R^3)_2$ ,  $-C(S)R^3$ ,  $-NR^3-C(O)OR^3$ ,  $-O-C(O)OR^3$ ,  $-O-C(O)N(R^3)_2$ ,  $-NR^3-C(S)R^3$ ,  $=N-OH$ ,  
 $=N-OR^3$ ,  $=N-N(R^3)_2$ ,  $=NR^3$ ,  $=NNR^3C(O)N(R^3)_2$ ,  $=NNR^3C(O)OR^3$ ,  $=NNR^3S(O)_n-N(R^3)_2$ ,  $-NR^3-$   
 $C(S)OR^3$ ,  $-NR^3-C(S)N(R^3)_2$ ,  $-NR^3-C[=N(R^3)]-N(R^3)_2$ ,  $-N(R^3)-C[=N-NO_2]-N(R^3)_2$ ,  $-N(R^3)-$   
 $C[=N-NO_2]-OR^3$ ,  $-N(R^3)-C[=N-CN]-OR^3$ ,  $-N(R^3)-C[=N-CN]-(R^3)_2$ ,  $-OC(O)R^3$ ,  $-OC(S)R^3$ ,  
 $-OC(O)N(R^3)_2$ ,  $-C(O)N(R^3)-N(R^3)_2$ ,  $-O-C(O)N(R^3)-N(R^3)_2$ ,  $O-C(O)N(OR^3)(R^3)$ ,  $N(R^3)-$   
 $N(R^3)C(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  $N(R^3)-OC(O)R^3$ ,  $-OC(S)N(R^3)_2$ ,  
 $-OC(S)N(R^3)(R^3)$ , or  $PO_3-R^3$ .

7. (Previously presented) The compound according to claim 5 wherein:

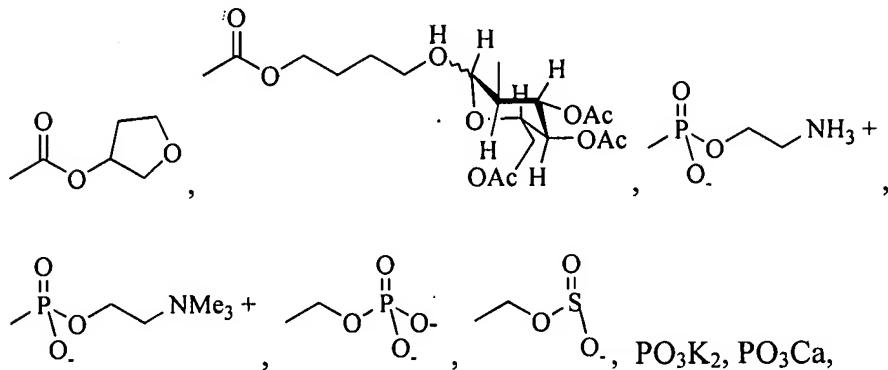
D' is selected from C<sub>1</sub>-C<sub>15</sub> alkyl or C<sub>2</sub>-C<sub>15</sub> alkenyl, each of which contains one or more substituents selected from -SH, -CO<sub>2</sub>R<sup>3</sup>, -C(O)-N(R<sup>3</sup>)<sub>2</sub>, -S(O)<sub>n</sub>-N(R<sup>3</sup>)<sub>2</sub> or -N(R<sup>3</sup>)-C(O)-R<sup>3</sup>.

8. (Canceled)

9. (Withdrawn – Currently amended) The compound according to any one



-(L)-(L)-3-pyridylalanine, -(L)-3-pyridylalanine, -(L)-histidine, -CHO, 



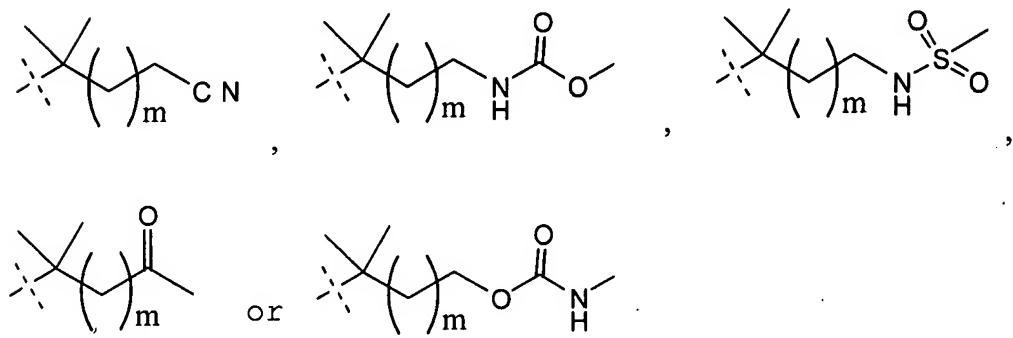
$\text{PO}_3$ -spermine,  $\text{PO}_3$ -(spermidine)<sub>2</sub> or  $\text{PO}_3$ -(meglamine)<sub>2</sub>.

10-11. (Canceled)

12. (Original) The compound according to claim 10, wherein:

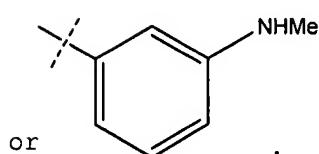
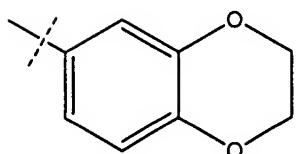
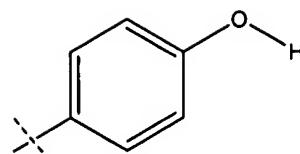
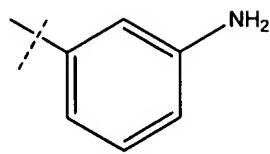
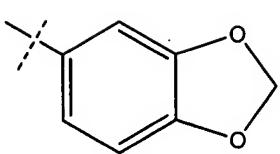
D' is  $-\text{CH}_2\text{-R}''$ ; and

R'' is selected from



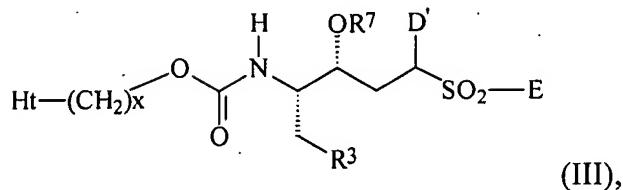
wherein m is 0 to 3.

13. (Original) The compound according to claim 10, wherein E is selected from



14. (Withdrawn) The compound according to claim 10, wherein R<sup>7</sup> is -PO<sub>3</sub><sup>2-</sup>

15. (Currently amended) The compound according to claim 1, having the formula III:

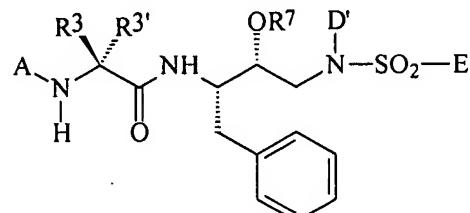


(III),

wherein x = 1; and

R<sup>3</sup> is phenyl.

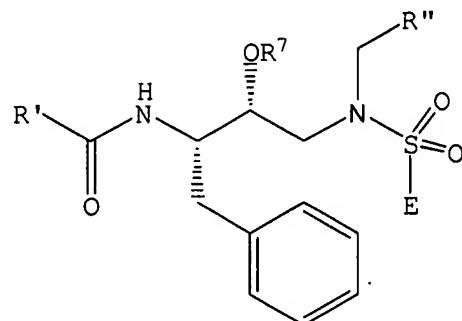
16. (Withdrawn) The compound according to claim 1, having the formula IV:



(IV);

wherein R<sup>3</sup> is selected from H, Ht, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl or C<sub>5</sub>-C<sub>6</sub> cycloalkenyl; wherein any member of said R<sup>3</sup>, except H, is optionally substituted with one or more substituents selected from -OR<sup>2</sup>, -C(O)-NH-R<sup>2</sup>, -S(O)<sub>n</sub>-N(R<sup>2</sup>)(R<sup>2</sup>), -N(R<sup>2</sup>)<sub>2</sub>, -N(R<sup>2</sup>)-C(O)-O(R<sup>2</sup>), -N(R<sup>2</sup>)-C(O)-N(R<sup>2</sup>), -N(R<sup>2</sup>)-C(O)-(R<sup>2</sup>), -N(R<sup>2</sup>-OR<sup>2</sup>)<sub>2</sub>, -C(O)-Ht, Ht, -CN, -SR<sup>2</sup>, -CO<sub>2</sub>R<sup>2</sup>, or NR<sup>2</sup>-C(O)-R<sup>2</sup>.

17. (Currently amended) The compound according to claim 1, wherein said compound is selected from any one of compound numbers: 1, 2, 3, 4, 5, 6, 22, 127, 203, 234, 277, 278, and 279, ~~363, and 364~~:

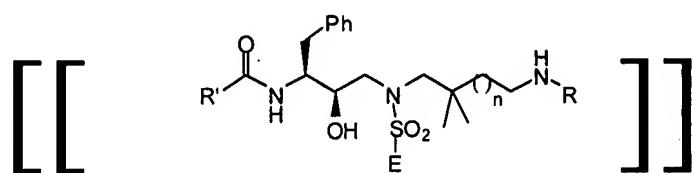


wherein R<sup>7</sup> is H; and

Compound	R'	R''	E
1			
2			
3			

Compound	R'	R''	E
4			
5			
6			
22			
127			
203			
234			
277			
278			

Compound	R'	R''	E
279			



Compound	R'	E	n	R
363			3	
364			3	

18-22. (Canceled)

23. (Currently amended) A composition comprising a compound according to any one of claims 1-7, [[10,]] 12, 13, 15, and 17 or a pharmaceutically acceptable salt thereof in a therapeutically effective amount, and a pharmaceutically acceptable carrier.

24. (Canceled)

25. (Original) The composition according to claim 23, wherein said composition is formulated as a pharmaceutically acceptable, orally available tablet or capsule.

26. (Previously presented) A method of treating an HIV virus infection in a human comprising the step of administering to said human a composition according to claim 23.

27-29. (Canceled)

30. (Previously presented) A method of treating an HIV virus infection in a human comprising the step of administering to said human a composition according to claim 25.

31. (Canceled)